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Should women be offered elective cesarean section in the hope of preserving pelvic floor function?

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The editors of this journal have asked me to represent the “con” side of the raging elective cesarean delivery debate. The reader should note that this may not necessarily reflect my actual professional opinion which is in a state of flux given the paucity of strong medical, economic and sociological data from which to form a fact-based opinion. Having said this, however, there is no doubt that many factors exist to support the contention that a global policy of elective cesarean delivery is ill-advised.

Why do women want to consider an elective cesarean delivery—that is, a major surgical procedure done before the onset of labor for no currently known medical indication? The primary reasons given include prevention of pelvic floor disorders, such as urinary and fecal incontinence and pelvic organ prolapse, and maintenance of sexual function. Minor reasons include fear of the labor pain, scheduling issues and greater control over the delivery process.

Thus, in considering this debate, it is important to question whether cesarean delivery does in fact prevent such disorders, and of equal importance, at what cost.

It is clear that in young and middle-aged women, vaginal delivery increases the risk of pelvic floor disorders by two or threefold. It is also clear that every obstetrician and urogynecologist has encountered the very unfortunate pelvic floor “cripple”—the young, otherwise healthy woman with devastating urinary incontinence, fecal incontinence and/or pelvic organ prolapse following a difficult vaginal delivery. However, looking only at odds ratios, relative risks, and anecdotes of these disorders hides the facts that most women

deliver vaginally and most women do not have severe pelvic floor disorders.

In single-cause diseases, the cause (in this case, vaginal delivery) is both necessary and sufficient to cause the disease. Vaginal delivery would be necessary for pelvic floor disorders, if (and only if) the non-occurrence of vaginal delivery guarantees the non-occurrence of pelvic floor disorders. Vaginal delivery would be sufficient for the development of pelvic floor disorders, if (and only if) the occurrence of vaginal delivery guarantees the occurrence of pelvic floor disorders. Nearly eight in nine women deliver babies, usually via the vaginal route. However, according to a regional study, only one in nine undergoes surgery for pelvic floor disorders [1]. Clearly, vaginal delivery itself is not sufficient to cause the end-stage disease of operable pelvic floor disorders. In addition, nulliparous women also get pelvic floor disorders (albeit at a lower rate), demonstrating that vaginal delivery is not necessary to cause such disorders.

Indeed, pelvic floor disorders should be considered multi-factor diseases. Multi-factor diseases differ from single-factor diseases in some important ways. In multi-factor (multiple gene plus environment plus other factors) diseases, variations in genes may produce a genetic predisposition for the disease. A woman’s physical, biochemical, and physiologic makeup may respond variably to childbirth factors in such a way as to produce or not produce pelvic floor disorders. Treating pelvic floor disorders as a single-cause disease not only obscures the truth but also creates laziness amongst researchers—if one considers vaginal delivery to be the sole cause for pelvic floor disorders, why look for other etiologies?

Based on results from a large population-based study, researchers estimated that a woman’s risk of moderate or severe urinary incontinence would be decreased from about 10% to about 5% if all of her children were delivered via cesarean [2]. The risk would NOT be eliminated. While elective cesarean delivery would eliminate the risk of anal incontinence specifically caused by anal sphincter rupture during vaginal delivery, the

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vast majority of women overall with fecal incontinence have other reasons for leakage, such as irritable bowel syndrome, medication effects and aging. Indeed, both urinary and fecal incontinence increase with age. Studies of older nulliparous women find the same or higher rate of these disorders as do studies of younger parous women [3]. To suggest to women that elective cesarean delivery will eliminate the lifetime risk of urinary and fecal incontinence is disingenuous.

Further, cesarean delivery is not without risk. While some believe that the increased maternal mortality risk associated with cesarean delivery is confounded by the disproportionate presence of medical and obstetric complications among women delivered surgically, in a population-based case-control study, even after controlling for such complications, there was a fourfold increase in mortality [4]. Even if the mortality risk after one cesarean delivery is similar or lower than that of vaginal delivery, such statistics underestimate the true risk of a policy of elective cesarean delivery as they fail to take into account the risk of dying from future complications, such as abnormal placentation and uterine rupture. The risk of placenta previa and accreta, both disorders with potentially catastrophic ramifications, increases substantially with each subsequent cesarean delivery [5]. A policy of elective cesarean delivery relies on women accurately predicting their total family size before their first delivery; this is likely an unrealistic goal.

Intraoperative surgical complications occur in 12–15% of cesarean deliveries. While major complications are higher in cesarean delivery performed during labor or emergently, major complications still occur during elective cesarean deliveries in nearly one in 20 women [5], and postoperative complications (excluding pelvic floor disorders) are more common in women undergoing cesarean delivery.

While basic science studies reveal changes in nerves, muscles, and anatomy after vaginal delivery, it is important not to confuse such surrogate outcomes with actual disease-specific outcomes. Further prospective epidemiologic research is needed to understand the impact of all delivery modes on short- and long-term pelvic floor disorders.

The neonate must also be considered in this discussion. While a policy of delivering babies at 39 weeks by cesarean would eliminate stillbirths that occur after that time, the risk of scheduled surgical delivery is not negligible. Infants delivered by cesarean before the onset of labor have a greater risk of iatrogenic prematurity and neonatal respiratory morbidity, including transient tachypnea of the newborn and respiratory distress

syndrome. Fetal laceration occurs at the time of cesarean delivery in 1.4% of vertex infants [6]. Whether elective cesarean delivery (without labor) has an impact on mother–infant bonding and successful breastfeeding is not known.

In a thoughtful summary of ethical considerations in elective cesarean delivery, Sharma and colleagues [7] conclude that elective primary cesarean delivery cannot be supported in beneficence-based or justice-based clinical judgment given the current evidence, and that obstetricians should “neither offer nor recommend it”. An obstetrician faced with a request for elective cesarean delivery should educate the patient and engage her with a thorough informed consent process. If the woman still desires surgery after this discussion, and she understands the risks and benefits, she is a candidate for the procedure. However, the authors note that if the physician personally disapproves of performing such a surgery, referral to another provider is appropriate as “preserving both physician integrity and patient autonomy is vital for the ethical practice of obstetrics”.

Avoiding vaginal births is not a feasible comprehensive prevention program for pelvic floor disorders. Researchers must continue to sort out which specific obstetric factors are most deleterious, and to what extent various environmental, physical and genetic factors place women at higher risk. Only armed with such information can we impact the care of those most likely to suffer from pelvic floor disorders caused by childbirth without applying a surgical prevention strategy to those unlikely to be affected.

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